

Final Exam

APPM/MATH 4650 Fall '20 Numerical Analysis

Due date: Thur/Sat, Dec. '20, 1:30 to 4, via Gradescope/Canvas/Proctorio. **Instructor:** Prof. Becker

Instructions There are **two components** to this final. The rules are *different* than for the midterm

50 points The online Canvas “quiz” which is true/false or multiple choice.

100 points The written part (with questions listed below on this document; currently we just have place-holder questions).

Both portions of the test are taken as part of the same Canvas “quiz”, as this will activate Proctorio, so do not end the quiz until you have finished *both* portions of the exam

You’ll have access to your computer, and can use basic programming if needed, but you may *not* use Matlab/python’s advanced features (such as their builtin root-finders or ODE solvers, for example, unless otherwise specified). You **cannot use the internet** other than for uploading to Gradescope, or checking Canvas/Piazza, or connecting to colab or something similar. In particular, you may **not use wikipedia or stackexchange or google websites**.

Unlike the midterms, these two components can be taken in any order, and there is a single combined time limit of 2.5 hours. Both sections are open-note, open-book (Burden and Faires 9 or 10th edition), but closed internet. If you have any notes on the cloud or use github, please download these locally before taking the exam. We’ll use Proctorio which monitors your internet traffic; on Monday of finals week we’ll do a dry-run of the software.

This exam only works if you follow the CU Honor Code. Violating the rules of the exam are simply not fair to your fellow students. Do not discuss any aspect of this exam with other students until after 4 PM Saturday (the two sections of the class will take slightly different exams, but still, do not discuss until after both sections have taken the exam).

Have questions? Ask on Zoom (via chat, or we can talk in a break out room).

On neither portion of the exam are you allowed to use a symbolic math program (graphing calculator, Mathematica, Maple, Desmos, Sage, Wolfram Alpha, Matlab/Python with symbolic packages, etc.). You *can* use a calculator if you want.

Problem 1: Sample question

Problem 2: Sample question

Problem 3: Sample question

Problem 4: Sample question